California Public Utilities Commission

CONSUMER PROTECTION AND SAFETY DIVISION
RAILROAD OPERATIONS AND SAFETY BRANCH

Annual Railroad Local Safety Hazard Report
to the
California Legislature
July 1, 2012

Pursuant to Public Utilities Code
Section 7711

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CALIFORNIA PUBLIC UTILITIES COMMISSION
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EXECUTIVE SUMMARY

This report is prepared pursuant to Public Utilities Code Section 7711, which requires the California Public Utilities Commission (Commission or CPUC) to identify local safety hazards on California railroads, and to report on recent California railroad accident history. The report includes the following:

- A list of all railroad derailment accident sites in the state on which accidents have occurred within the previous five years, including descriptions of the nature and probable causes of the accidents.

- A list of the original railroad sites in the state that the Commission determined pose a local safety hazard**.**

The first part of this report discusses new developments since the tragic San Bruno gas pipeline explosion and fire, including safety culture change and risk management lessons learned from that event that generalize to all industries. The second part of this report summarizes the historical background of the events that led to the Commission's local safety hazard rulemaking and the subsequent settlement that governs CPUC's current local rail safety hazard regulatory and inspection program. The next section briefly describes the Railroad Operations and Safety Branch (ROSB) activities. Appendix 1 presents a five-year graph, listing, and descriptions of derailment accidents in California. Appendix 2 is a list of the U.S. Department of Transportation (DOT) accident cause codes used in these descriptions. Appendix 3 lists the original 19 local safety hazard sites designated by the Commission.

SAFETY CULTURE AND RISK MANAGEMENT

ROSB is learning from the lessons of Dunsmuir and San Bruno. Staff is working to enhance the safety culture of the railroad industry as well as its own safety culture, and will ensure that identification and mitigation or elimination of hazards is not limited to existing regulations and non-compliance with those regulations. Staff will be implementing a renewal of risk assessment with a new and permanent risk assessment position approved for the 2012-2013 budget.

ROSB staff must provide the critical functions of inspection, enforcement, risk assessment, risk management, information-gathering and analysis, and consequently participate in rulemaking, litigation, mediation, and negotiation effectively. Staff must continuously improve its understanding of safety culture, system safety planning, high reliability operations, and other contributions of the applied engineering, organizational, and behavioral sciences. Risk management must be the overarching principle, and must be fully integrated in all projects, plans, and oversight activities within the ROSB program.

HISTORICAL BACKGROUND

In July 1991, a Southern Pacific (SP) freight train derailed near Dunsmuir. The derailment punctured a rail tank car, resulting in a leak of the herbicide metam sodium which killed fish, other wildlife, and vegetation in and along the river for forty miles and caused widespread

health problems for area residents. That same month, an SP derailment in Seacliff released liquid hydrazine. Other rail accidents involving derailments, runaway trains, injuries and fatalities increased public and legislative concerns.

The Federal Rail Safety Act of 1970, the primary federal statute regulating freight rail safety, provides states with an exemption to the generally preemptive federal regulatory scheme of the federal railroad safety laws:

> A State may adopt or continue in force an additional or more stringent law, regulation, or order related to railroad safety or security when the law, regulation, or order —
>
> (1) is necessary to eliminate or reduce an essentially local safety or security hazard;
> (2) is not incompatible with a law, regulation, or order of the United States Government; and
> (3) does not unreasonably burden interstate commerce. (49 U.S.C. Section 20106)

In August 1991, the Commission ordered an investigation into the Dunsmuir and Seacliff derailments, and in October 1993, the Commission opened a Rulemaking to consider mitigations for local rail safety hazards within California. In addition, the California Legislature passed legislation requiring the Commission to adopt regulations to prevent serious rail accidents. The legislation required the Commission to identify local safety hazard sites on railroad lines in California and mandated that the Commission adopt regulations to eliminate or reduce recurring railroad accidents at these identified local safety hazard sites.

In December 1994, the Commission issued its decision regarding the Dunsmuir derailment, which found the Cantara Loop, a ten-mile section of railroad track that included the derailment site, to be a local safety hazard. CPUC concluded that the derailment was caused by track-train dynamics and the positioning of cars in the train.

In September 1997, the Commission issued a formal decision[1] adopting safety regulations to eliminate or reduce essentially local safety hazards. Based on statistical methods and models to analyze site characteristics and accident concentrations, the decision identified 19 local safety hazard sites in California mountains, and adopted regulations governing operations at 13 of these sites. The Cantara Loop was “Site 9” of these local safety hazard sites.

Following issuance of the decision, the Commission's rail safety regulations were litigated in federal courts.[2] The Ninth Circuit Court of Appeals in its 2003 decision concluded that Commission rules were preempted by federal law in several areas and remanded the issue of Commission regulation of train make-up rules to the district court. The District Court and the Ninth Circuit Court both rejected the railroads’ claim that the CPUC did not have the authority to require the railroads to comply with their own train make-up rules.[3]

In response to the remand, the parties – ROSB, Union Pacific Railroad Company, and BNSF Railway Company – settled the train make-up rule issue by filing a Stipulated Final Judgment allowing the Commission to enforce the Railroads’ rules for train make-up at the local safety

[1] Decision (D.) 97-09-045 (75 CPUC2d 1).

[2] See *Union Pacific Railroad Co. v. CPUC*, 109 F Supp. 2d 1186 (N.D. Cal. 2000) and *Union Pacific Railroad Co. v. CPUC*, 346 F.3d 851 (9th Cir. 2003).

[3] The Ninth Circuit Court affirmed the authority of the CPUC to enforce the railroad’s train make-up rules with one exception. The Court ruled that CPUC enforcement of train make-up rules that governed car placement by coupler types was preempted, and the Court remanded the issue of changing the list of covered rules to the District Court.

hazard sites.[4] The Stipulated Final Judgment was approved by the U.S. District Court for the Northern District of California on May 10, 2004.[5]

After discussions with the railroads, the Commission modified its original decision in an Order dated February 16, 2006, to conform to court rulings and the settlement. The Commission has the power to enforce train make-up rules at the following 13 identified local safety hazard sites: Sites 1, 3, 4, 7, 9, 12, 16, 22, 23, 26, 28, 29, and 31 (see Appendix 3). Railroads must provide timely notice to the CPUC of any changes to those rules, including a technical analysis of the safety of such changes. Penalties are provided for failure to provide this notice.

July 1991 Dunsmuir Derailment

INSPECTION OF LOCAL SAFETY HAZARDS

In 2011, ROSB inspectors conducted inspections where CPUC has authority to enforce railroad safety rules, including the local safety hazard sites. The Commission's Rail Operations and Safety Branch (ROSB) has federally-certified hazardous materials inspectors, who carry out hazardous materials inspections to assist in determining which railroad lines and sites pose a local safety hazard. The inspectors ensure that railroads have appropriate processes in place for the secure movement of shipped materials classified as hazardous. These processes include chain-of-custody requirements, tracking procedures, and identification and mitigation of risks at vulnerable locations. The inspectors conduct annual on-site security inspections at facilities of the BNSF Railway and the Union Pacific Railroad (UPRR). Additionally, they conduct security inspections of the twenty other railroads that operate in California, identifying hazardous materials being transported and evaluating existing security measures.

ROSB Hazmat/Safety inspectors additionally conduct annual compliance inspections for the following state-wide mandates for all railroads to address safety hazard issues:

- Include in the risk assessments a list of all types of cargo moved through or stored at rail facilities and provide all necessary training to employees to execute that task.
- For each site, conduct a risk assessment of rail property and functions.

[4] The parties agreed to remove rules governing car placement by coupler types, dynamic brake rules subject to FRA enforcement, and Road Railer rules.

[5] Case No. C 97-03660-TEH.

- Collate all security and infrastructure protection plans and information into one defined safety manual.
- Implement a written Security and Infrastructure Protection Program to identify and alleviate threats to critical infrastructure, and provide an annual update to the ROSB.

In 2011, ROSB personnel performed 66 inspections at local safety hazard sites, with the following results:

Inspections	Defects Written	Violations Written	Units Inspected
66	77	0	1508

Inspection – A review of railroad equipment and facilities to determine compliance with CPUC safety regulations.

Defect – A condition of non-compliance that must be corrected.

Violation – A defect found not corrected, or a defect serious enough to warrant immediate remediation and civil penalty.

Units – One tank car, one locomotive, etc.

The Rail Safety Improvement Act of 2008 mandated the installation of Positive Train Control (PTC)[6]; on all Class I railroads' main lines with passenger train traffic or freight traffic carrying poisonous/toxic by inhalation (PIH/TIH) hazardous materials. Class I railroads must have operational PTC systems installed by December 31, 2015. Most of the original local safety hazard sites are on main line track that will have PTC.

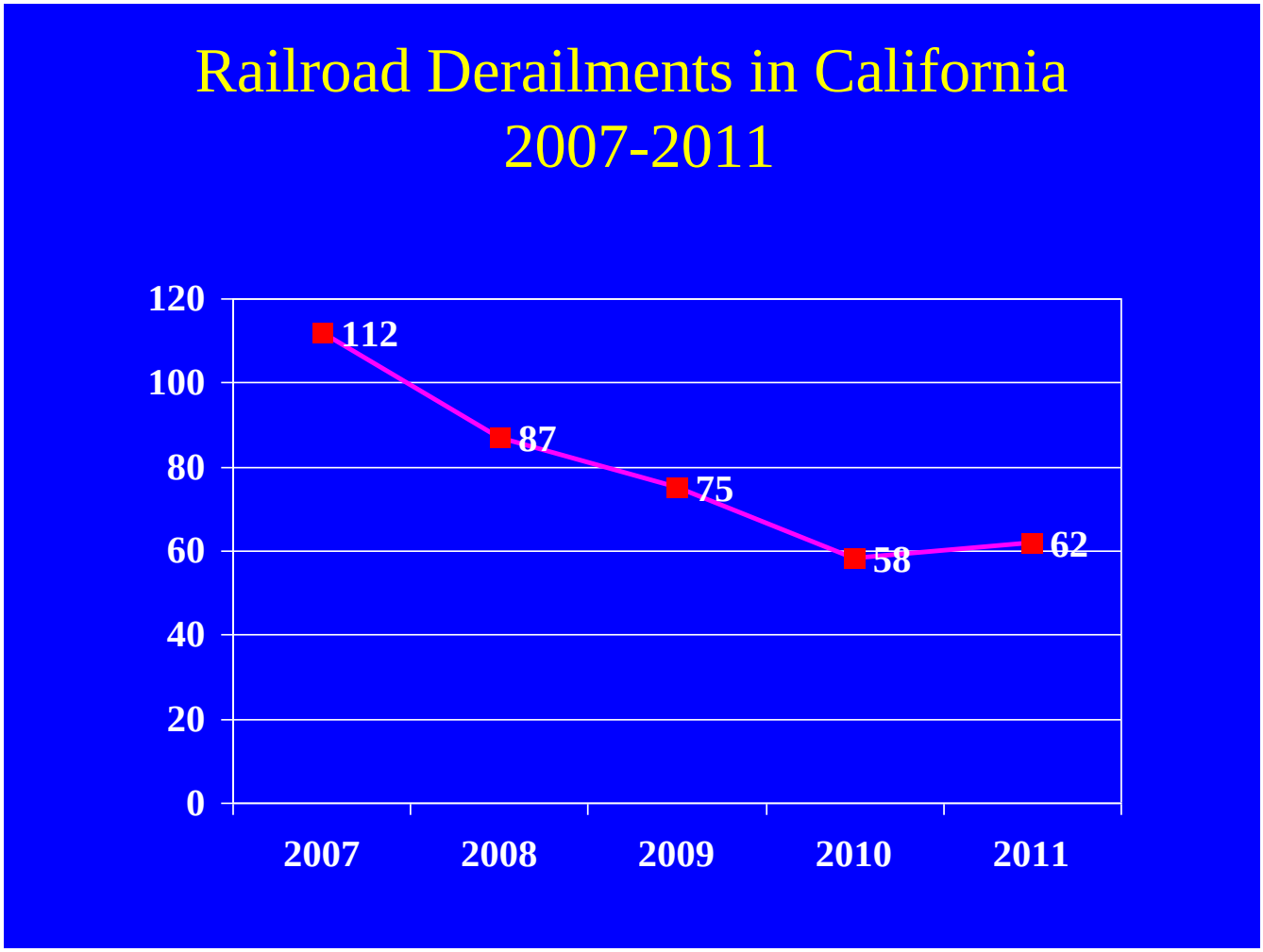
SUMMARY

Staff will be working to enhance the safety culture of the industry as well as its own, and will be implementing a renewal of risk assessment with a new and permanent risk assessment position approved in the 2012-2013 budget. Staff will be constructing an enduring and comprehensive risk management program in pursuit of its mission: *Securing the safety of the public and workers exposed to California's railroad operations*.

[6] Positive Train Control is a GPS-based system designed to prevent collisions between trains, over-speed derailments (derailments caused when a train exceeds speed limits), incursions into established work zone limits (i.e., for roadway workers maintaining track), and the movement of a train through an improperly positioned switch.

Appendix 1 - Five Year Railroad Derailment History

The graph below shows railroad derailments in California for the five-year period from January 2007 through December 2011, followed by a list of derailments organized by county, with brief descriptions of the cause of each accident, and shows the relevant U.S. DOT accident cause codes in a separate column.



Source: Office of Safety Analysis Web Site, Table 1.04, "Overview Charts by State," http://safetydata.fra.dot.gov/officeofsafety/, accessed 5/26/2012

Appendix 2 - U.S. DOT Accident Cause Codes (Appendix C of the FRA Guide for Preparing Accident/Incident Reports)

Appendix 3 - List of Original 19 Local Safety Hazard Sites (D. 97-09-045)

1) Site No. 1 - SP Coast Line, Milepost 235.0 to 249.0
   (Now UPRR Coast Subdivision)

2) Site No. 3 – SP Yuma Line, Milepost 535.0 to 545.0
   (Now UPRR Yuma Subdivision)

3) Site No. 4 – SP Yuma Line, Milepost 586.0 to 592.0
   (Now UPRR Yuma Subdivision)

4) Site No. 6 - SP Yuma Line, Milepost 542.6 to 589.0

5) Site No. 7 – SP Siskiyou Line, Milepost 393.1 to 403.2
   (Now Central Oregon and Pacific Railroad Siskiyou Subdivision)

6) Site No. 9 – Shasta Line (Black Butte District), Milepost 322.1 to 332.6
   (Now UPRR Black Butte Subdivision)

7) Site No. 10 – SP Shasta Line, Milepost 322.1 to 338.5
   (Incorporated into Site No. 9 – see above)

8) Site No. 12 – SP Roseville District, Milepost 150.0 to 160.0
   (Now UPRR Roseville Subdivision)

9) Site No 16 – SP Bakersfield Line, Milepost 335.0 to 359.9
   (Now UPRR Mojave Subdivision)

10) Site No. 19 – SP Bakersfield Line, Milepost 463.0 to 486

11) Site No. 22 – UP Feather River Division, Milepost 234.0 to 240.0
    (Now UPRR Canyon Subdivision)

12) Site No. 23 – UP Feather River Division, Milepost 253.0 to 282.0
    (Now UPRR Canyon Subdivision)

13) Site No. 25 - UP Feather River Division, Milepost 232.1 to 319.2

14) Site No. 26 – UP Bieber Line, Milepost 15.0 to 25.0
    (Now BNSF Gateway Subdivision)

15) Site No. 27 – UP L.A. Subdivision Cima Grade, Milepost 236.5 to 254.6

16) Site No. 28 – ATSF Cajon, Milepost 53.0 to 68.0
    (Now BNSF Cajon Subdivision)

17) Site No. 29 – ATSF Cajon, Milepost 81.0 to 81.5
    (Now BNSF Cajon Subdivision)

18) Site No. 30 – ATSF Cajon, 55.9 to 81.5

19) Site No. 31 – ATSF San Diego, Milepost 249.0 to 253.0
(Now BNSF San Diego Subdivision)